

**REMARKS**

**REMARKS REGARDING NON-COMPLIANT AMENDMENT**

In response to the Notice of Non-Compliant Amendment, the Applicant has included the full listing of claims above, including the amendments to Claim 43 to add the two commas, which is discussed in detail below.

The Applicant apologizes for this oversight in not including the Amendment to the Claims to show the changes to Claim 43.

**ADMINISTRATIVE MATTERS**

Prior to addressing the most recent non-final Office Action, the Applicant wishes to address two administrative matters that were previously discussed in the Applicant's response that was filed with the RCE, but neither of which were addressed in the most recent Office Action.

**STATUS OF DRAWINGS**

A set of drawings was filed with the application on August 24, 2001, yet none of the three Office Actions issued in this case (e.g., the Non-Final Office Action mailed on July 27, 2006, the Final Office Action mailed on February 14, 2006, and the previous Non-Final Office Action mailed on August 19, 2005) indicate whether or not the drawings as filed with the application are acceptable, which is typically indicated in item 10 of the Office Action Summary sheet of an Office Action.

As in the last response that was filed with the RCE, the Applicant again respectfully requests that the status of the drawings as filed with the application be indicated on the next communication from the Office. If the next communication from the Office does not indicate whether or not the drawings as filed are acceptable, the Applicant will proceed on the basis that the drawings as filed are acceptable to the Office.

**STATUS OF INFORMATION DISCLOSURE STATEMENT FILED 8/3/05**

On August 3, 2005, the Applicant filed an Information Disclosure Statement (IDS) with a Form 1449 that listed 4 U.S. patents, 1 published U.S. patent application, and two non-patent documents. The postcard received back from the Office indicates that this IDS

was received on August 8, 2005. Although numerous other Form 1449's from other IDS's file before and after this particular IDS have been returned, the Applicant has yet to receive back a copy of the initialed Form 1449 indicating that these references have been considered from the August 3, 2005 IDS.

The Applicant has reviewed the status of this IDS via Private PAIR, which indicates that this IDS was filed and reference capture occurred on August 8, 2005, followed thereafter by an entry dated August 8, 2005 that "Information Disclosure Statement considered." The Applicant has verified via PAIR that a copy of the IDS and Form 1449 are included in the Image File Wrapper for this application.

As in the last response that was filed with the RCE, the Applicant respectfully requests that a copy of the initialed Form 1449 for the IDS filed on August 8, 2005 be returned with the next communication from the Office.

## **STATUS OF CLAIMS**

No claims have been cancelled, added, or withdrawn.

Claim 43 has been amended.

Claims 1-5, 8, 9, 13-20, 23, 24, 28-34, and 38-52 are currently pending in the application.

## **SUMMARY OF THE REJECTIONS/OBJECTIONS**

Claim 43 has been rejected under 35 U.S.C. § 112, second paragraph, as allegedly indefinite. Claims 1-3, 5, 8, 9, 13-18, 20, 23, 24, 28-31, 33, 34, and 38-52 have been rejected under 35 U.S.C. § 102(e) as allegedly anticipated by U.S. Patent Application Publication Number 2005/0223115 of Hanson et al. (" *Hanson* "). Claims 4, 19, and 32 have been rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over *Hanson* in view of the reference titled "Adaptive Frequency Hopping Implementation Proposals for IEEE 802.15.1/2 WPAN" by Gan et al. (" *Gan* "). The rejections are respectfully traversed.

## **RESPONSE TO REJECTIONS NOT BASED ON THE PRIOR ART**

Claim 43 has been rejected under 35 U.S.C. § 112, second paragraph, as allegedly indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention. The Office Action states: “Claim 43 recites the limitation ‘the communication device selecting.’ There is insufficient antecedent basis for this limitation in the claim.

Claim 43 has been amended above to read as follows: “wherein the mechanism designating the particular communications device is based on one or more communications devices from the plurality of communications devices, other than the communications device, selecting the particular communications device.” The addition of the commas around the phrase “other than the communications device” is intended to clarify that “the communications device” is excluded from the plurality of communications devices from which the one or more communications devices perform the “selecting the particular communications device.” Thus, in Claim 43, it is “one or more communications devices from the plurality of communications devices, *other than the communications device*,” (emphasis added) that performs “selecting the particular communications device.”

The addition of the commas to Claim 43 clarifies that there is no limitation of “the communications device selecting” as referenced in the Office Action, but rather that “the communications device” is modifying “the plurality of communications devices. The Applicant respectfully submits that the amendments to Claim 43 traverse the rejection under 35 U.S.C. § 112, second paragraph

## **RESPONSE TO REJECTIONS BASED ON THE PRIOR ART**

### **A. CLAIM 1**

#### **(1) INTRODUCTORY DISCUSSION OF CLAIM 1**

Claim 1 features “assigning, to a first participant from the plurality of participants, **one or more functions** to be performed by the **first participant**” and “in response to any of the one or more handoff criteria being satisfied, assigning **the one or more functions** to the **second participant**.” (Emphasis added). For example, as illustrated in FIG. 1A, the first participant can be master participant P4, to whom the management functions are assigned, while the second participant can be associate master participant P5, who is designated to take over the role of the master if master participant P4 is unable to continue acting as the master. Then, as illustrated in FIG. 1B, when the original master participant P4 is no longer available

to server as master, associate master participant P5 becomes master participant P5 and thereafter handles the management functions originally performed by the original master participant P4.

(2) INTRODUCTORY DISCUSSION OF *HANSON*

In contrast to the approach of Claim 1, *Hanson* discloses an approach for providing mobile and other intermittent connectivity in nomadic systems (e.g., systems with mobile devices that move around). (Title, Abstract.) *Hanson* is directed to solving problems that arise when using mobile technologies, such as a disconnected or out of range user (paragraphs [0009-0010]), changes in network addresses (paragraphs [0011-0012]), and security (paragraphs [0013-0014]). In particular, *Hanson* explains that most networking applications require TCP/IP sessions or private virtual circuits that cannot continue to function if network interruptions are encountered or roaming between networks occurs (e.g., due to change in network addresses). (Paragraph [0008].)

More specifically, *Hanson* discloses a “Mobility Management Server (MMS),” such as MMS 102 of Figure 1, that is coupled to the mobile network and that maintains persistent connections to the network and other peer processes. (Abstract.) If a Mobile End Station (MES), such as MES 104a of Figure 1, becomes unreachable, suspends, or changes network address, the MMS maintains the connection to the associated peer task, such as a peer task on host server 100 of Figure 1. (Abstract.) As a result, if the MES temporarily loses contact with its network medium, such as loosing contact with transceiver 106a, the connection to the peer, such as host 100, is maintained by MMS 102. (Abstract.) That this means that while the MMS and the host 100 communicate in a typical fashion to maintain the persistent connection in a normal fashion, the MMS and MES communicate with each other using Remote Procedure Calls (RPCs) and an Internet Mobility Protocol. (Abstract.)

Note that the technique of *Hanson* is a form of “proxying” in which the MMS, such as MMS 102 of Figure 1, acts as an intermediary between two devices that normally would be directly connected, such as peer host 110 and MES 104a of Figure 1. (Paragraph [0024].) In fact, *Hanson* uses the terminology of “proxying” in describing the approach described therein as follows: “If a Mobile End System becomes unreachable, suspends, or changes network address (e.g., due to roaming from one network interconnect to another), the Mobility

Management Server maintains the connection to the associated peer, by acknowledging receipt of data and queuing requests. This **proxying** by the Mobility Management Server allows the application on the Mobile End System to maintain a continuous connection even though it [e.g., the MES] may temporarily lose its physical connection to a specific network medium.” (Paragraph [0024]; emphasis added.)

Therefore, each MES has a “proxy address” on the network that acts as a “virtual address” of the MES, and the MMS maps the virtual address to a current actual address of the MES, which may change as the MES moves, but since the MMS tracks that current actual address, the MMS knows where to send the RPCs to for that MES. (Paragraph [0025].) (See also Claim 1 of *Hanson* that describes the use of a “proxy server” and paragraphs [0026, 0027, 0029, 0053, 0070, 0073, 0083, 0087, 0093-0095, 0108, 0167, 0179-0183, 0285, 0327, and 0328] that describe the MMS as a proxy server or as proxying the communications between an MES and a peer host.)

In such a proxying approach as described in *Hanson*, the peer host 110 of Figure 1 communicates with MES 106a via MMS 102 by sending messages to the MES’ virtual address, and the MMS 102 in turn uses the mapping of that virtual addresses to an actual physical address to communicate with MES 106a. Note that the communications between MES 106a and MMS 102 are done via remote procedure calls (RPCs) and the Internet Mobility Protocol (see paragraphs [0027-0030]), whereas the communications between the MMS 102 and host 110 are the normal persistent TCP/IP interactions (e.g., the typical “open connection”).

Also note that while *Hanson* generally refers to the MMS “maintaining” the open connection when the MES becomes unreachable, the MMS is also “maintaining” the open connection even when the MES is available due to the MMS functioning as a proxy. Thus, *Hanson*’s emphasis on “maintaining” the open connection upon failure of the MES is intended to reinforce the problem being solved by *Hanson* (e.g., the loss of the open connection when MES is unavailable). This is in contrast to *Hanson* being interpreted as indicated that the MMS operates differently depending on whether the MES is available or not, which would not be consistent with the MMS functioning as a proxy. As a result, if and when an MES becomes unreachable, the only change is that the MMS cannot communicate

with the MES until the MES becomes available again, as opposed to *Hanson* being read as disclosing that the MMS somehow becomes only operative when the MES fails.

Thus, MES 106a does not communicate directly with host 110 or vice versa, since each only communicates directly with MMS 102, which as the proxy, knows to which host a particular communication from an MES is to be sent and to which MES a particular communication from a host is to be sent. The advantage of *Hanson*'s approach is that when an MES becomes unavailable, which would result in a broken connection if the MES were communication directly with a host, the connection is still maintained by the MMS because the MMS keeps the connection open even if the MMS cannot communicate with the MES.

(3) THE OFFICE ACTION'S CITATIONS FROM *HANSON*

The Office Action's rejection of Claim 1 (and the other two corresponding independent claims), only says to "see paragraphs 0024, 0028 and 0029," without explaining what in those paragraphs is being taken to match up with the "first participant," the "second participant," and the "one or more functions" of Claim 1. However, based on a review of those paragraphs and other portions of *Hanson*, plus the basis of the rejections of the other claims, it appears to the Applicant that the Office Action is equating a Mobile End Station, such as MES 106a of Figure 1, to the "first participant" of Claim 1, the Mobility Management Server, such as MMS 102 of Figure 1, to the "second participant," and "maintaining the connection to the associated peer" as the "one or more functions of Claim 1. If this understanding is not correct, the Applicant respectfully requests that the next communication from the Office explain what features of *Hanson* are being equated to the "first participant," the "second participant," and the "one or more functions" of Claim 1.

Turning to the paragraphs cited in the rejection of Claim 1, paragraph 0024 describes that the MMS "maintains the state of each of any number of Mobile End Systems and handles the complex session management required to maintain persistent connections to the network and to other processes (e.g., running on other network-based peer systems.)" Note that this description in *Hanson* indicates that the MMS, not the MES, maintains the persistent connections, and that this function performed by the MMS is being formed independent of whether or not the MES is in communication/contact with the MMS or not. This is consistent with the MMS functioning as a proxy between the MES and a peer system, since the peer

interacts with the MMS that in turn interacts with the MES, and thus, it is not possible for the MES to maintain a connection with the peer.

Paragraph 0024 then states: “If a Mobile End System becomes unreachable, suspends, or changes network address (e.g., due to roaming from one network interconnect to another), the Mobility Management Server maintains the connection to the associated peer, by acknowledging receipt of data and queuing requests. This **proxying** by the Mobility Management Server allows the application on the Mobile End System to maintain a continuous connection even though it may temporarily lose its physical connection to a specific network medium [e.g., if MES 106a loses the connection to transceiver 106a in Figure 1].” (Emphasis added.) Thus, this description, as with the first part of paragraph 0024, explains that it is the MMS that maintains the connection with the peer, not the MES, although in this section Hanson is emphasizing the improvement over the prior approaches, namely that in Hanson’s approach the unavailability of the MES does not affect the open connection since the peer does not see the MES (or vice versa).

Then paragraphs 0028-0029 describe the use of remote procedure calls between the MES and the MMS to exchange information and for the MMS to keep connection state information synchronized so that if the MES’ physical link to the MMS is interrupted, the proxy server/MMS maintains the connections with the peer.

(4) *HANSON FAILS TO DISCLOSE “ONE OR MORE FUNCTIONS” ASSIGNED TO A FIRST PARTICIPANT AND THEN THAT THOSE “ONE OR MORE FUNCTIONS” ARE ASSIGNED TO A SECOND PARTICIPANT WHEN THE HANDOFF CRITERIA ARE SATISFIED*

The Applicant respectfully submits that *Hanson* fails to disclose “assigning, to a first participant from the plurality of participants, **one or more functions** to be performed by the **first participant**” and “in response to any of the one or more handoff criteria being satisfied, assigning **the one or more functions to the second participant**,” as featured in Claim 1 (Emphasis added). Given the Applicant’s understanding from above that the “one or more functions” of Claim 1 is taken to be “maintaining the open connection” of *Hanson*, then that function of maintaining the open connection is only performed by the MMS, not the MES. There is nothing in *Hanson* about the maintaining of an open connection by the MES with the peer, since that is a function only performed by the MMS and since the MES and the peer do

not communicate directly with each other; rather, the MES and peer interactions occur via the MMS acting as the proxy between the MES and peer.

In fact, if the MES were to maintain the open connection with the peer, then the connection would be interrupted when the MES becomes unreachable, suspends, or changes network address, which is the same problem that *Hanson* describes in the Background section and that *Hanson*'s approach is designed to address. Because *Hanson* solves that problem by introducing the MMS as an intermediary between the peer and MES so that the MMS proxies communications between the peer and MES, the peer is unaffected when the MES is unable to communicate with the MMS.

Also note that all the communications with the MES in *Hanson* are described as being with the MMS, not with the peer, which is consistent with the use of the MMS as a proxy. Furthermore, such communications between the MES and MMS are in the form of RPCs and the use of the Internet Mobility Protocol, whereas the communications between the MMS and peer are the normal TCP/IP interactions that maintain the open connection and thus are unaffected when the MES becomes unreachable. Also, note that there is nothing in *Hanson* about the peer communicating with both the MES and MMS simultaneously and then just communicating with the MMS alone without the MES when the MES is unreachable.

#### (5) OTHER INTERPRETATIONS OF “ONE OR MORE FUNCTIONS” IN *HANSON*

Another possible interpretation of *Hanson* as to what corresponds to the “one or more functions” of Claim 1, besides that addressed above, is that it is the communicating between the MES and MMS that corresponds to the “one or more functions” of Claim 1. However, in that case, when the MES is unreachable, there is no assigning of those functions to the MMS, since by definition those communications are between the MMS and the now unreachable MES that is unable to communicate due to the lack of a link between the MES and the wireless access point (e.g., transceiver 106a for MES 104a in Figure 1).

In addition, another possible interpretation of *Hanson* as to what corresponds to the “one or more functions” of Claim 1 is that the MES and peer somehow communicate directly. But this is not a correct interpretation of *Hanson* because it is contrary to the functioning of the MMS as a proxy between the MES and peer since the MES and peer only communicate with the MMS and not with each other.

In fact, when the MES in *Hanson* becomes unreachable, the only change in operation of the system, such as that of Figure 1, is that the MES does not communicate with the MMS until the MES becomes reachable again. As far as the peer knows, there is no problem with the MES since the peer only sees the MMS as the proxy/intermediary between it and the MES. In fact, from the peer's perspective, the MES may never exist, which is typical of proxying approaches in that the two devices on either side of the proxy need not have any knowledge of the other since each device only sees the proxy. Thus, when the MES becomes unreachable, there can be no "one or more functions" that are previously assigned to the MES that are now assigned to the MMS since the functions by the MES and MMS are unique to themselves.

(6) CONCLUSION OF DISCUSSION OF CLAIM 1 AND *HANSON*

Because *Hanson* fails to disclose, teach, suggest, or in any way render obvious "assigning, to a first participant from the plurality of participants, **one or more functions** to be performed by the *first participant*" and "in response to any of the one or more handoff criteria being satisfied, assigning *the one or more functions* to the *second participant*" (emphasis added), the Applicant respectfully submits that, for at least the reasons stated above, Claim 1 is allowable over the art of record and is in condition for allowance.

B. CLAIMS 16 AND 31

Claims 16 and 31 contain features that are either the same as or similar to those described above with respect to Claim 1.

For example, Claim 16 features "assigning, to a first participant from the plurality of participants, **one or more functions** to be performed by the *first participant*" and "in response to any of the one or more handoff criteria being satisfied, assigning *the one or more functions* to the *second participant*" (emphasis added), which are the same as in Claim 1.

As another example, Claim 31 features that the mechanism of the **communications device** is configured to "perform **one or more functions**" and "*the particular communications device* performs *the one or more functions*, in response to any of the one or more handoff criteria being satisfied," which is similar to Claim 1. Therefore, based on at least the reasons stated above with respect to Claim 1, the Applicant respectfully submits that Claims 16 and 31 are allowable over the art of record and are in condition for allowance.

C. CLAIMS 2-5, 8, 9, 13-15, 17-20, 23, 24, 28-30, 32-34, AND 38-52

Claims 2-5, 8, 9, 13-15, and 47-49 are dependent upon Claim 1, Claims 17-20, 23, 24, 28-30, and 50-52 are dependent upon Claim 16, and Claims 32-34 and 38-46 are dependent upon Claim 31. Each of Claims 2-5, 8, 9, 13-15, 17-20, 23, 24, 28-30, 32-34, and 38-52 is therefore allowable for the reasons given above for Claims 1, 16, and 31. In addition, each of Claims 2-5, 8, 9, 13-15, 17-20, 23, 24, 28-30, 32-34, and 38-52 introduces one or more additional limitations that independently render it patentable. However, due to the fundamental differences already identified, to expedite the positive resolution of this case a separate discussion of those limitations is not included at this time. Therefore, it is respectfully submitted that Claims 2-5, 8, 9, 13-15, 17-20, 23, 24, 28-30, 32-34, and 38-52 are allowable for the reasons given above with respect to Claims 1, 16, and 31.

CONCLUSION

The Applicant believes that all issues raised in the Office Action have been addressed and that allowance of the pending claims is appropriate. After entry of the amendments, further examination on the merits is respectfully requested.

The Examiner is respectfully requested to contact the undersigned by telephone if it is believed that such contact would further the examination of the present application.

For the reasons set forth above, it is respectfully submitted that all of the pending claims are now in condition for allowance. Therefore, the issuance of a formal Notice of Allowance is believed next in order, and that action is most earnestly solicited.

To the extent necessary to make this reply timely filed, the Applicant petitions for an extension of time under 37 C.F.R. § 1.136.

If any applicable fee is missing or insufficient, throughout the pendency of this application, the Commissioner is hereby authorized to any applicable fees and to credit any overpayments to our Deposit Account No. 50-1302.

Respectfully submitted,

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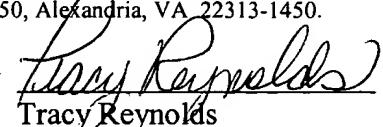
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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Hon. Commissioner for Patents, Mail Stop AMENDMENT, P.O. Box 1450, Alexandria, VA 22313-1450.

on Feb 6, 2007

by



Tracy Reynolds